

Bill Brewer, Chair  
Granville Site Technical Committee  
10805 Cahill Road  
Raleigh, NC 27614

**Via Express Mail**

January 31, 2005

EPA Region 5 Records Ctr.



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Mr. Kevin Adler, Remedial Project Manager  
U.S. Environmental Protection Agency, Region 5  
Office of Superfund, Remedial & Enforcement Response Branch  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

Subject: Granville Solvents Site - Site Treatment Suspension Draft Contingency Plan and Site Group Response to Ohio EPA Comments

Dear Mr. Adler:

I have attached two documents prepared by the Granville Solvents Site Management Group as requested by US EPA in a letter dated December 8, 2004 which provided conditional acceptance of the Group's August 2004 proposal to suspend groundwater and soil treatment at the Granville Site followed by post-shutdown groundwater monitoring. Both a draft Contingency Plan and a response to the Ohio EPA comment letter dated November 16, 2004 regarding the system suspension proposal are attached. Please note that the Group has begun preparations to suspend groundwater and soil treatment at the site. Groundwater monitoring will continue according to the currently approved monitoring plan until the revised monitoring plan in the August 2004 proposal has been approved.

Thank you for your attention to this matter. Should you have any questions regarding these documents, please call me at 919-668-3218.

Regards,

A handwritten signature in cursive script that reads "Bill Brewer".

William S. Brewer, Ph.D.  
Granville Solvents Site Technical Committee Chair

cc: Fred Myers, OEPA  
Peter Felitti, US EPA Regional Counsel  
John Galasso, Lucent Technologies  
Kristin Oswick, Goodyear Tire & Rubber Company  
Roger McCready, NCR Global Environmental Health & Safety

A Contingency Plan for the Proposal to Suspend Groundwater and Soil Treatment  
System Operation and Commence Post-Shutdown Groundwater Monitoring at the  
Granville Solvents Site

January 31, 2005

Granville Solvents Site Response Management Group

The Granville Solvents Site Response Management Group has submitted a proposal in August 2004 to suspend groundwater and soil treatment at the site and implement a groundwater monitoring plan. The purpose of this action is to observe groundwater flow conditions and plume migration patterns absent the influence of treatment system extraction to determine the need for further active treatment. The following paragraphs outline a draft contingency plan to assure that steps and procedures will be in place following the suspension of groundwater and source soil treatment at the Granville Solvents Site to protect the Village of Granville drinking water supply wells. The Contingency Plan consists of the following components:

1. System operations suspension and systems maintenance.
2. Groundwater monitoring and data analysis.
3. Action Triggers.
4. System Restart and Shutdown.

**1. System Shutdown and Maintenance** - Once this draft Contingency Plan has been submitted to US EPA and Ohio EPA, shutdown the groundwater and soil treatment systems will commence. Both the groundwater treatment and the soil extraction systems will be shutdown in a manner that will allow rapid restart if needed in the future. In addition, routine maintenance and service will be conducted on the systems and system parts once every six months when groundwater samples are collected. Any needed repairs of the treatment systems noted following routine maintenance will be addressed at the time they are recognized to assure rapid start up if needed.

**2. Groundwater Monitoring Plan** □ A focused groundwater monitoring program will be implemented after the suspension of the treatment systems. The monitoring plan outlined in Section 3.1.2 of the August Proposal has been modified as described herein base on comments received from US EPA/OEPA. The groundwater monitoring program will focus on monitoring the potential migration of specific volatile contaminants that might occur once the treatment of groundwater and soils has been suspended. Samples from eight (8) designated wells will be collected once every six months over a five year period following system suspension. Collected samples will be analyzed for VOCs following the procedures outlined in Metcalf & Eddy, Inc. 1995d. □ *Groundwater Monitoring Program Plan for the Granville Solvents Site in Granville, Ohio* □ The groundwater monitoring network consists of the following monitoring wells:

1. Four monitoring wells (MW-6, MW-2D, MW-PI and MW-4D) in the soil source area,
2. GSS-MW15 is a new monitoring well to be installed in an intermediate plume area,
3. Two monitoring wells (MW-8 and MW-7D) in the plume leading-edge area between the compliance point and the source area.
4. Monitoring wells GSS-MW8 and GSS-MW9 in the compliance zone.

Upon receipt of groundwater quality data collected during the systems shutdown period the data will be periodically evaluated using the Monitoring and Remediation Optimization System or MARCOS or similar software to discern trends in concentrations of contaminants of concern. The rate, magnitude, direction, and transport of any plume regeneration, if it occurs, will be tracked to evaluate the attenuation of chemicals of concern and to make decisions regarding the appropriate response to protect the Village drinking water wells.

If new policy or guidance from either Ohio EPA or US EPA becomes available, such policy will be evaluated to determine if new or more flexible options might be used to significantly reduce long-term monitoring requirements and enhance protection of human health and the environment.

**3. Action Triggers and Response Actions** □ In addition to response actions that may result from the trend analysis of the source area, intermediate, leading-edge and compliance wells, certain events, if observed while monitoring groundwater, will trigger immediate action to restart components of the existing treatment systems. In particular:

1. Compliance Well - If the concentration of any VOC meets or exceeds the MCL in a sample collected from monitoring well GSS-MW8 and GSS-MW9, groundwater treatment will resume to reduce the concentrations to levels below respective MCLs.
2. Leading Edge Wells □ If the concentration of any VOC in a sample collected from MW-8 or MS-7D is greater than twice the MCL, groundwater treatment will be reinstated to retard the migration of the plume toward the village drinking water wells and reduce contaminant levels.

**4. Treatment System Restart and Subsequent Shutdown** - Depending upon which of the events or combination of events identified above paragraph, a treatment system restart will be triggered.

If MCLs are exceeded in the compliance wells, the groundwater treatment system will be restarted. Groundwater extraction and treatment will continue until the concentration of all compounds of concern is below their respective MCLs in three consecutive samples collected each quarter. At that time, groundwater treatment will be suspended and the groundwater monitoring plan as described above will be followed.

If trend analysis of groundwater data indicates that a plume has reformed at or up gradient of the leading edge wells and the concentration of any VOC in the plume is greater than twice the MCL, groundwater extraction will commence and the extracted groundwater will be treated to reduce contaminant concentrations. Once the trend has been halted or reversed and no compounds of concern exceed a concentration equal to or greater than twice their respective MCL in three consecutive samples collected each quarter from the leading edge wells, groundwater treatment will be suspended and the groundwater monitoring plan as described above will be reinstated.

Finally, if analysis of the data collected from the source area wells indicates that contaminants of concern are migrating into the groundwater from the source area at concentrations that would cause MCLs to be exceeded at the compliance point, the soil treatment systems (soil vapor extraction and air sparging) will be restarted along with groundwater extraction from EW-2 as well as groundwater treatment. Treatment systems will continue to be operated until the migration trend from the source area to the groundwater has been halted, reversed, or reduced such that the threat of exceeding MCLs in the compliance zone has been eliminated. At that time, the treatment will be suspended and the groundwater monitoring plan will be reinstated. If the trend cannot be reversed or the threat to groundwater cannot be reduced, a soil-vapor analysis of the source area will be conducted to identify specific source areas for additional treatment.

**Draft response to OEPA Comments Regarding the Proposal to Suspend  
Groundwater and Soil Treatment System Operation & Commence Post-Shutdown  
Groundwater Monitoring at the Granville Solvents Site**

**Granville Solvents Site Response Management Group**

**January 31, 2005**

**Comment 1. Section 2.2, Groundwater Quality:** The Proposal states that cis 1,2 dichloroethene (cis 1,2 DCE) was detected at MW-8 at a concentration of 48 ug/l and that chemicals of concern were not detected at GSS-MW8, GSS-MW9, GSS-MW10, and GSS-MW14. The fact that cis 1,2 DCE was not detected in those wells may be related to monitor well screen elevations, rather than not being there. Our review of the data indicates that cis 1,2 DCE is detected only in wells that are screened at or above the potentiometric ground water surface (895-900 feet above mean sea level). The well screen interval at MW-8 is from 888-898 feet above mean sea level, whereas the well screen intervals at GSS-MW8, GSS-MW10, and GSS-MW14 are approximately 880-890 feet above mean sea level or 5-10 feet below the potentiometric surface. Also, cis 1,2 DCE has not been detected in MW-8D, which is nested with MW-8, but is screened approximately 15 feet lower than MW-8. Apparently the cis 1,2 DCE plume, as it is mapped, occurs at the top of the aquifer or capillary fringe.

**Response:** OEPA's assertion that cis 1,2 DCE has only been detected in MW-8 and not in any of the GSS wells is generally true for most of the chemicals of concern that have been detected to date. However, the groundwater monitoring program to be implemented will rely heavily on OEPA wells that are screened similar to MW-8. The program will include MW-6, MW-2D, MW-P1, and MW-4D in the source area, and MW-8, MW-7D, and a new well, GSS-MW15 that will be installed in the intermediate zone as a part of the post shut-down monitoring network. The only exception to the extensive use of OEPA wells will be in the compliance zone. GSS-MW8 and GSS-MW9 will be the primary sentinel wells in that zone used to detect any compound of concern in that area. The wells selected for post shut-down monitoring are more than sufficient to detect the formation of any plume well upstream from the compliance zone or village well field.

**Comment 2. Section 2.3, Source Area Soils:** The proposal states that the soil treatment goals for chemicals of concern were determined based on a point of compliance that is 450 feet west of GSI property. This allows volatile organic compound (VOC) leaching from soil to ground water at the source. If contamination left in the soils is contributing to the pollution of the ground water, then there is a potential violation of Ohio Revised Code Section 6111.04.

**Response:** The data collected to date by the Group indicates that a substantial amount of VOCs have been extracted from the source soils and the groundwater just beneath the source soils. Based on the data accumulated by the Group, we have met the Agency's requirement as described in the EECA. Soil vapor extraction as well as ground water air sparging has been conducted for the past 2 years or more. In fact, groundwater air sparging may well account for a significant portion of the volatile compounds extracted from the overlying soils. In addition, the post shutdown groundwater monitoring program includes 5 wells within the soil source area. Any migration of volatile organics from the overlying soils will be detected just below the source area and, as a contingency, the soil treatment system (SVE and air sparging) can be restarted to prevent additional migration and protect the underlying groundwater or a preliminary soil gas survey can be conducted to define the extent to which the source area may be contributing VOCs to the groundwater.

**Comment 3. Section 2.4, Response Action Objectives:** The "no further action" levels are based on the assumption of future industrial/commercial land use and a point of compliance 450 feet west of the property boundary. The remaining soil and groundwater contamination may not meet unrestricted land use standards at the GSI property or other nearby properties where the contaminant plume has migrated. We would like clarification from US EPA if the Agency will require additional remedial actions to ensure protection of human health. And, if US EPA is willing to accept a cleanup to industrial/commercial standards, Ohio EPA would like to know how the use restriction will be implemented, monitored, and enforced.

**Response:** The proposal submitted by the Group to US EPA is a proposal to shut down or suspend current treatment processes so that we might evaluate the behavior of any contaminant plume that may reform following the shut down for a period of 5 years. Contingencies are in the proposal to assure that human health is protected during that time. The intent is to determine if a plume does regenerate, to understand any plume migration patterns, and to determine if any further remedial action is needed. We believe that any additional remedial action, site remedy or land use restrictions can best be decided following post shut down groundwater monitoring.

**Comment 4. Section 2.5.1, Current Site Conditions, Groundwater, Page 6:** VOCs are detected only in wells that were installed by Ohio EPA (labeled “MW”). None of wells installed by the Group (labeled “GSS-MW”) had VOC detections. As in the case of cis 1,2 DCE (see comment 1), this appears to be related to the elevation of the screened interval. That is, the screens in the MW wells, which had detections of VOCs, straddle the potentiometric surface; however, the screens in the GSS-MW wells appear to have been installed below the potentiometric surface. We believe that the Proposal should further evaluate current groundwater conditions and explain why VOCs are currently detected only in the “MW” wells.

**Response:** See response to Comment 1.

**Comment 5. Section 2.5.2, Source Area Soils, Page 9:** The Proposal states that the residual mass of VOCs in the soil is likely to be below cleanup goals. The proposal based this claim on the calculated mass of VOCs removed from the soil treatment system by off-gas monitoring plus a drop in the VOC removal rate. Ohio EPA’s opinion is that the mass of VOCs removed using off-gas data is a subjective assessment and is not necessarily indicative of the mass of VOCs left in the soil. We do not believe that this method alone is an adequate demonstration of compliance with soil cleanup objectives.

**Response:** See response to Comment 2.

**Comment 6. Section 3.1.2, Post-Shutdown Monitoring, Page 11:** The top of the screen at the proposed compliance well, GSS-MW-15, should be screened at a depth that correlates with those monitoring wells where VOCs are currently being detected. That is, the well screen should straddle the potentiometric surface, which is approximately 900 feet above mean sea level(see comments 1 and 4 above).

**Response:** The Group agrees with the recommendation and will comply.

**Comment 7. Section 3.1.2, Post-Shutdown Monitoring, Groundwater, Page 11 and Section 4.0, Post-Shutdown Data Evaluation and Documentation:** The proposal states that the Group will monitor groundwater for three years after the system is shut down. It is Ohio EPA’s position that a minimum of five years of post-shutdown monitoring is warranted in order to be consistent with the National Contingency Plan. Also, if the system is shut down permanently and no further active remediation is required, then the remaining contamination will presumably be allowed to naturally attenuate. In this case, Ohio EPA believes that the Group should implement a long-term monitored natural attenuation program in accordance with US EPA guidance.

**Response:** The Group agrees that five years is a reasonable post-shutdown monitoring period and will change the Proposal. As noted in the response to Comment 3, the Group believes that the best selection of a remedy can be made following post-shutdown monitoring.

**Comment 8. Section 3.2, Soil Response Action and Section 3.2.1, Suspension of Soil Treatment Operation:** (1) The Proposal states, “collected data demonstrates that soil treatment goals have been achieved”. This statement is based on an estimate of mass removed by “summa canister data” from the soil treatment system. Ohio EPA does not agree that there is a direct relationship between the vapor concentration and the mass of contamination that remains in the subsurface soil. The Proposal also further justifies achievement of the soil treatment goals by stating that the rate of VOC removal has dropped to 6% of the initial rate. There are other factors that could contribute to the drop in vapor concentrations that are unrelated to the mass of VOCs that remain in the soil.

**Response:** The Group believes that any additional soil source investigations should be guided by the outcome of the post-shutdown groundwater monitoring program. VOCs have been removed from the source area to the extent that we believe that we have met the soil treatment goals agreed to in the EECA. However, as stated in our response to comment 2, wells at and around the source area will be monitored and contingencies such as restarting the systems will be in place to ensure that any residual VOCs in the soil do not impact human health.

**Comment 9. Section 3.2.1, Suspension of Soil Treatment System Operation:** The proposal states that a total of four soil samples will be collected to verify compliance with soil cleanup goals. Currently, with the information provided, we have no way of knowing if four samples will adequately verify compliance with soil cleanup goals. A more comprehensive post-remedial soil assessment is needed instead of relying on any one particular measurement. The number, location, depths, and types of soil samples that need to be collected should be based on data needs identified in the assessment. Factors that need to be considered are site geology, current contaminant characterization, soil treatment system design, soil treatment performance data, and a mass flux assessment to and from groundwater.

**Response:** As stated in our response to comment 2 and comment 8, the Group believes that any additional source soil sampling should be guided by the outcome of post-shutdown groundwater monitoring program. Any sampling plan, if warranted, will be submitted to the Agencies for approval before implemented.



**Comment 10. Section 4.0, Post-Shutdown Data Evaluation and Documentation:**

Ohio EPA requests water level data and groundwater quality data be submitted to us when that data is available so that we can remain current regarding groundwater hydrology and contaminant plume concentration and migration. In addition, if groundwater contamination is allowed to remain above MCLs, a long-term monitored natural attenuation program should be developed (see Comment #7).

**Response:** The Group will ensure that all data and reports generated during the post-shutdown groundwater monitoring program are sent to Ohio EPA for review. See response to comment 3 in regard to the need to select any final remedy at this time.

**Comment 11. Section 5.0, Contingency Plan:** The proposal states that a contingency plan will be developed and provided to US EPA if the post-shutdown analysis indicates contaminant levels will be exceeded in GSS-EW-1. Ohio EPA believes that a contingency plan or a contingency process should be developed and submitted prior to shut down. Our principle reason for this is that a contingency plan will provide assurance that the soil treatment system and groundwater extraction systems will be properly maintained to facilitate rapid restart should the Group or the regulatory agencies decide that further treatment of the soil or groundwater is needed. A contingency plan will also further define performance standards and the specific mechanism(s) that will trigger a contingency. A plan will provide a process and schedule for implementation.

**Response:** The Group will submit a revised draft contingency plan to US EPA and Ohio EPA.